



North Carolina Department of Transportation
Transportation Program Management Unit - Value Management
Innovative Technologies and Products Awareness Report
September 6, 2018

PRODUCT HIGHLIGHT – Duraslot®



Duraslot

Duraslot, which is manufactured by Advanced Drainage systems, is a slotted trench drainage system used to collect storm water along the shoulders or medians of roadways. Slotted trench drains are often used on flatter surfaces that don't have a natural slope to prevent standing water. Typical slotted trench drains are made using corrugated metal or concrete pipe with steel or cast-iron grates. Duraslot is comprised of corrugated polyethylene pipe with an aluminum slotted riser on top. These materials help avoid corrosion issues by being impervious to most acids, road salt, and storm water contaminants. The polyethylene pipe also contains a smooth inner wall for increased flow to help prevent clogging and debris buildup. For installation, Duraslot pipe is placed in a trench along the pavement and braced in place for concrete to be poured around it and consolidated by vibration. The pipes are installed at a slope to help drainage and can include a grate on the slotted riser to reduce the maintenance required to remove debris from clogged drains.

Advanced Drainage System has been working with the NCDOT Hydraulics Unit and Field Engineers on installing their Duraslot product on project I-4750AA along I-77 in Huntersville. This is a field trial to see how it performs. Over 5,000 feet have been placed with about 4,500 feet left to install. The Department will monitor the performance of Duraslot over time to ensure that its performance is satisfactory. DOT Engineers believe that even with similar upfront costs to traditional trench drains, there will be an overall savings due to the expected decrease in maintenance from the previously mentioned clogging improvements and corrosion protection.

More information can be found at:

<https://www.ads-pipe.com/products/pipes/duraslot-trench-drain>



Completed Duraslot Installation

PRODUCT INNOVATION – Fog Seal

Treating an existing asphalt roadway with fog seal can be comparable to putting a wax coat on your car's paint. Fog seal protects the road from the elements much like wax protects the paint. It's an asphalt surface treatment application used to maintain asphalt pavement and extend its life – in some cases up to 7 years. Each application can last 3 years or more. In addition to making the road look freshly paved, it locks the exposed stone in place, seals small crack and surface voids, and seals the surface against weather elements. Fog seal is made up of water diluted emulsified asphalt and doesn't require sand and stone to be mixed in. Those aspects allow it to be a low-cost solution to improve the life of low volume roads with speed limits of 35 mph or less. Emulsified asphalt with aggregate is preferred for roads with higher speeds since it provides higher skid resistance. For application, the fog seal is heated to between 160°F to 170°F. The mixture is then spray applied using a conventional tack distributor truck, and the road can be used in 2-6 hours depending on weather conditions. Typical costs for application can range from \$0.85 to \$1.50 per square yard. Crack sealant can be applied to larger cracks prior to applying the fog seal for better preservation.



Roadway recently treated with Fog Seal

This type of application is now being used by many state DOT's as well as multiple divisions in NCDOT across the state including Divisions 5, 7, and 8. Division 8 District offices have utilized fog seal on seven contracts for rehabilitating secondary roads so far and plan to continue using it in the future. They picked fog seal to help re-seal the aging roads and rejuvenate the appearance. Division 8's first application began in 2011 but started being utilized more in 2015. The 12 month inspections have all been satisfactory.

More information can be found at

<https://connect.ncdot.gov/projects/research/RNAProjDocs/2010-02FinalReport.pdf>